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NATIONAL SECURITY COUNCIL
WASHINGTON, D.C.

VIA LDX

October 22, 1981

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MEMORANDUM FOR [redacted]
Executive Secretary
Central Intelligence Agency

SUBJECT: Analysis of Ability of U.S./COCOM Oil/Gas Controls to Impede Soviet Oil/Gas Production

The following is urgently required for high-level executive use:

> A concise (three to five pages) analysis of the ability to impede Soviet oil/gas production by imposition of the Option I/II Oil and Gas Equipment and Technology Controls as defined in the existing Oil/Gas Options Paper. The assessment should focus on the probable net effect on Soviet oil/gas production (a) if the U.S. were successful in enlisting COCOM acceptance of such controls and (b) if the U.S. proceeds unilaterally, without COCOM cooperation.

Ideally, both assessments would provide estimates of the effects on production levels in terms of the percentage of production loss that would result and would translate these percentages to effects on the growth rate of the economy and to other difficulties and shortages that might result.

It is also important that the time frame over which the effects of the U.S./Western control actions would occur be defined. For example, since most Western exports aid drilling or exploration, there would probably be considerable lag between the imposition of controls and resultant effects on Soviet production.

Similarly, how long would Soviet production be impaired? Permanently? Or would they gradually overcome the loss of Western equipment and technology?

[illegible]: Sov side has not availed self of full opportunities available – exploration svcs — would they? –

I recognize the difficulties of providing this information. However, I am confident that your estimates will be very useful in establishing the rough orders of magnitude of the effects of alternative policies.

Your response by close of business, Tuesday, October 27, 1981, would be greatly appreciated. Please do not hesitate to call me for any further amplification that may be required.

Allen J. Lenz
Staff Director

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Review October 23, 1987

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25X1 [redacted]

DEPARTMENT OF STATE

WASHINGTON, D.C. 20520

October 23, 1981

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(With SECRET Attachment)

NFAC 6772-81

File

TO : OVP - Mrs. Nancy Bearg Dyke
NSC - Mr. Allen Lenz
DOE - Mr. Henry Thomas
DOC - Ms. Jean Jones
DOD - Mr. Jay Rixse
JCS - LTC Edward Bucknell
USTR - Mr. Richard Heimlich
Treasury - Mr. David Pickford
CIA - [redacted] 25X1
OMB - Mr. William Schneider

SUBJECT: Strategy Paper on Yamal Energy Alternatives

Attached for interagency consideration and comment is a working level draft strategy paper on Yamal energy alternatives as tasked by the SIG on East-West Economic Relations in its meeting October 9. The draft is being circulated in advance of SIG-level clearance owing to the presence of senior officers in Cancun.

Addressees are asked to review the draft promptly. Suggested revisions, in writing, should be sent to this office by COB Monday, October 26. A SIG meeting to discuss the draft will be scheduled for the week of October 26.

Katherine Shirley, for
L. Paul Bremer, III
Executive Secretary

Attachment:
Strategy paper with appendices

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(With SECRET Attachment)
GDS 10/23/87

Approved For Release 2009/04/06 : CIA-RDP83M00914R002000090018-6

A US Strategy Towards the West European-Soviet ion Gas Pipeline

Background

The ideal European response to the President's concerns about the pipeline would be total abandonment of the Siberian pipeline project. This would effectively reduce European vulnerability to the disruption or threat of disruption of Soviet gas supplies and eliminate the hard currency earnings the project would provide the Soviets.

Given the strong political commitment by European leaders to the project and the progress made in the negotiations to date, the project is expected to proceed. Since President Reagan aired U.S. concerns to European leaders at the July Ottawa Summit, the only critical unresolved issue is price. The Soviets and the Germans hope to conclude the discussions before the November 23-24 Brezhnev visit to Bonn. Agreement is expected to be announced at that time.

A fundamental issue is whether the U.S. can effectively pursue with the allies the development of a coordinated and mutually beneficial strategy for international energy security and East-West trade. Parts of this strategy are in place, but the pipeline raises broader strategic problems which must be considered. The Europeans view the Soviet gas as an important means to diversify their energy supply. Pursuing energy diversification has been an important objective in the IEA and at Economic Summits. However, European economies and political systems will remain vulnerable to Middle East oil disruptions and the pipeline would create still another source of vulnerability. The Europeans must be prepared to minimize the risk resulting from energy disruptions from one or the other or both of these sources.

A second fundamental issue exemplified by this project is the divergence of views on East-West trade between the US and the Europeans. The Europeans believe that trade results in benefits to both sides. The pipeline has wide labor and business support in those participating countries.

If the pipeline proceeds despite our strong concerns US objectives should be sixfold:

(i) Minimize European vulnerability to Soviet gas disruptions due to technical and/or political reasons;

(ii) Maximize the European options and incentives to achieve a favorable price and set of conditions for the gas;

(iii) Reduce the benefits which would accrue to the Soviet Union;

(iv) Signal that the United States is willing to do its share to strengthen the energy security of the West;

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(v) Take into account the need for Allied other European support for broader US objectives (e.g. TNF and tighter multilateral export controls); and

(vi) Ensure that any US economic restrictions should hurt Soviet interests more than US interests.

To address U.S. concerns and influence the timing, terms and conditions of the project it is imperative that the U.S. begin discussions with the FRG and other European participants by the first week in November, although at this late stage it may not be possible for the U.S. to prevent the construction of the pipeline. However, we should still continue to voice our basic concerns to the Europeans and, as President Reagan has promised, offer them options for meeting their energy needs.

Strong actions initiated by the United States--like an embargo of equipment needed for the project--may delay construction of the pipeline and could reinforce our arguments and their doubts about the need for future increased quantities. Valuable time could be gained--time which can benefit the Europeans in their continuing negotiations with the Soviet Union, as well as provide an important window of opportunity in which to strengthen European defenses against a possible future cut-off of gas supplies. The Europeans, however, may view such a delay as an extension of their vulnerability to Middle East energy. In addition, such a step would exacerbate our political difficulties with European allies and make progress on other high Administration priorities more difficult.

probably will but

Major U.S. Points to be Raised

Achieving the above objectives would require joint action by Western European countries and the United States. In forthcoming discussions with the Europeans, the U.S. should emphasize the following points:

(1) The economic viability of the pipeline is becoming more uncertain. There are growing indications that gas demand will be significantly lower than previously anticipated and that other, less risky energy supplies might be available from elsewhere. We must, however, recognize that while on purely energy grounds the pipeline is becoming less economically attractive, the Europeans see the pipeline as helping to provide jobs and to support key depressed industries within Europe.

The Europeans are trying and may be successful in holding out until the Brezhnev visit to Bonn for a better price and more favorable conditions. This is a point which we should emphasize. Barring renewed conflict and disruption in the Near East, a delay , even beyond the Brezhnev trip, could work to the advantage of the Europeans. The Europeans may oppose a protracted delay, however, since they view the period preceding the Brezhnev visit to Bonn as the best time to complete the deal.

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In the best of circumstances, Europe's gain can be maximized at the expense of the Soviet Union and the objective of reducing the benefits to the Soviets will be partially realized. (Annex I has a detailed discussion of the economic viability of the pipeline.)

(2) In a worst case scenario, Europe would be susceptible to increased political and economic leverage applied by the Soviet Union. Although European reliance on Soviet gas will only account for 5 percent of total energy consumption, some regions and sectors would be far more dependent. In the event of an interruption in Soviet gas supplies, there would be no readily available substitutes unless there was excess capacity in other parts of the gas grid. Unless there is sufficient stored gas and infrastructure to deliver it, gas is difficult to replace on short notice: there is no spot market and storage is expensive and technically difficult.

In the event of a Middle East oil disruption, the Soviet Union would have enhanced leverage which they might exploit. If both the Middle East oil deliveries and Soviet gas imports were disrupted simultaneously, Europe and its Allies would face serious economic, political and strategic difficulties.

(3) Other energy alternatives are available over the medium and longer term that can better serve European economic, security and political interests than the Soviet gas option. Imported coal, nuclear power, and intensified indigenous North Sea oil and gas production could all contribute to meeting future European energy demand and thereby replace the need for Soviet gas (see Annex 3). There are new developments which suggest that the Nigerians may be willing to provide significant quantities of natural gas at competitive prices. (DOE will circulate, shortly, an annex to this paper which goes into detail on this issue.)

(4) There are additional alternatives which the United States could choose to strengthen Western energy security. The U.S. is in the process of strengthening its own energy security: the President's move to decontrol oil has resulted in a dramatic drop in oil imports which has benefited all consuming nations; the size of the Strategic Petroleum Reserve has doubled in eight months; and nuclear power and Alaskan natural gas prospects have been given strong Presidential endorsement.

The U.S. could consider further actions which would require interagency approval before these ideas could be presented to the Europeans. Some of these would include deregulation of natural gas, more active stock build and the imposition of an oil import security fee. The U.S. could also explore with the Europeans ways to accelerate the already promising outlook for U.S. coal exports to Europe. In addition, the U.S. and others could appeal to the new government in Norway to expand its natural gas production and capacity and transport systems. Plans could be developed

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to assist Norway with recycling revenues into profitable long term sources of income so that its domestic economy is not adversely affected. The US could also discourage imports of long haul LNG to U.S. markets (for example, by applying a prohibitive import fee and/or a comparative fuel price test) and thereby induce some producers to reconsider their pricing decisions. European gas consumers would clearly benefit from such action. (Annex 4 goes into more detail on possible US action.)

(5) In the event that the ~~pipeline proceeds~~, means must be found and put in place to reduce European vulnerability. The best defense against a politically motivated cut-off is to have convincing emergency precautions in place that can be readily activated. Some of these precautions would include larger oil and gas stocks, shut-in gas reserves in European fields which could be used in a gas emergency, and more dual-fired capacity among large industrial users and electrical power plants--so that oil and coal could be substituted in the event of a disruption of the gas supply. There are several means to "internalize" the security costs (e.g., a gas import security fee) which could be used to finance security initiatives such as those described above. Such suggestions to the Europeans must be accompanied with convincing arguments for the need and preliminary assessments of the costs of these security measures. (Annex 2 has a fuller discussion of European vulnerability.)

(6) If it wished the US could try to ~~delay~~ complicate construction of the pipeline by seeking a joint US/UK embargo of key compressor components and technology for the project. Current plans for the pipeline call for west European compressor component manufacturers to procure compressor turbine rotors and drive shafts from General Electric. Only Rolls Royce now produces a turbine which is not based on U.S. technology and Rolls Royce is now prepared to deliver these key components. If we can obtain and effectively enforce a US-UK embargo of turbines to run the pipeline compressors, we may be able to delay the delivery of key components for ~~up to~~ two years. By that time a French licensee of G.E. technology could retool to produce a similiar product. On the other hand, it is doubtful that the UK would go along with such an equipment embargo. (British Defense Minister Nott's reaction to Secretary Weinberger was very negative.) The US could also consider unilateral action. Such action would not be as effective as a joint US-UK embargo, but it would signal the seriousness of US concerns over the pipeline. U.S. companies would lose sales; GE, for example, would lose some $175 million in sales and release a new competitor on world markets. Any other actions we might take are not likely to have the same impact in establishing the seriousness of our intentions.

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However, unilateral action is likely to meet with sharp European criticism and may weaken allied cooperation on other high Administration priorities. The motivation for such action will have to be clearly explained and understood because there could be charges that the US is unilaterally imposing its viewpoint on the Western alliance. If we choose to discuss the embargo option with the Europeans it will be necessary to develop a convincing argument to counter the likely European response that this is a move to punish Europe for going through with the deal. We should emphasize that such action is a worthwhile security measure and in long term Western security interests. Because such action could delay construction, it would give Europe more time to reassess the economic viability of the pipeline in light of recent and expected world energy markets. (See Annex V)

Recommendations

(i) That the objectives and means outlined in this paper be cleared by members of the SIG on East-West Economic relations and, shortly thereafter, by a Cabinet level group (probably NSC).

(ii) That a high level State-led team visit Bonn, Paris, Rome and other selected capitals during the first week of November to present these ideas to the Europeans.

(iii) That subsequent to, and depending on the results of these meetings, a decision memorandum to the President be drawn up on whether or not an US/UK embargo on key compressor components and technology should be sought.

ANNEX I - ECONOMICS OF THE SIBERIAN PIPELINE

The economics of the project are questionable:.

-- Since 1978 the economic factors affecting East-West gas trade have changed dramatically. Overall energy growth rates are down and markets are soft. European gas demand fell last year by 4 percent. It appears that the rate of substitution of gas for oil has slowed. Official estimates of future gas demand have been revised downward and the market is likely to be weak for a considerable period of time.

-- These fundamental changes in world energy markets raise serious questions as to whether the volume of gas contemplated for transmission through the pipeline can in fact find a market in Western Europe. While the Soviets may wish to set the FOB price as close as possible to the BTU equivalent of crude oil, in the current market and for the foreseeable future such a high price would almost certainly make it impossible for the gas to be competitive with other forms of energy in Western Europe.

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The pipeline project would make Europeans vulnerable to Soviet pressu

-- The volume of Soviet gas as a percentage of total European energy consumption is not alone a sufficient indicator of economic and political vulnerability:

- Gas is a difficult fuel to replace on short notice. Unlike oil, there is no spot market. Gas trade requires large start-up infrastructure investments in pipelines or LNG facilities. Furthermore, it is much more expensive and technically challenging to hold large strategic stocks of gas as compared to oil. Certain regions will be heavily dependent on Soviet gas and might apply strong pressure on national governments to avoid actions that could result in an interruption. In the event of an interruption, Soviet gas could not be readily replaced unless there was excess capacity in other parts of the European energy grid.

- Residential and commercial consumers are particularly dependent on gas. A cut-off of Soviet gas would be onerous for these politically sensitive sectors. Thirty percent of gas for the pipeline is earmarked for residential use. Residential and commercial consumers are the least able to absorb an abrupt fuel supply interruption. Homeowners have limited capacity to switch easily to another fuel. Furthermore, gas prices would probably rise precipitously in the wake of a Soviet embargo and thus place a harsh financial burden on homeowners and commercial businesses.

-- Technical or seasonal difficulties--perhaps complicated by the need to divert gas from export to domestic use to make up for reduced deliveries of Iranian gas--forced the Soviets to slow some gas shipments to the West last winter and spring. The probability of further technical or seasonal interruptions may increase as the Soviets try to ship more gas from outlying and more risky Siberian provinces to Western Europe.

-- In the past, the Soviet Union has used energy exports as a political lever, interrupting supplies to Yugoslavia, Israel, and China, among others. Under some circumstances, the Soviets might elicit otherwise unobtainable economic and political concessions from their West European gas customers.

-- Thus, West European vulnerability to Soviet gas leverage could be substantial. And it is not unreasonable to assume that the Soviets from time to time would see the dependence of Western Europe on Soviet gas as an opportunity to try to obtain political and/or economic benefits.

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ANNEX III - ENERGY ALTERNATIVES AVAILABLE TO EUROPE

European economic security and political interests could be better served by choosing non-Soviet alternatives.

-- A major alternative may be oil itself. The oil market for the 1980s has undergone a significant change from that of the late 1970s when plans for gas imports were developed. Few predicted the magnitude of demand reduction in response to rising oil prices. Much of this is due to structural changes in our economies and societies, not simply reduced economic growth. In light of these circumstances there is a possibility that energy prices may be relatively stable during the 1980s.

-- African gas is closer to our European allies than it is to us and can be an alternative to Soviet imports. There are substantial gas resources in Algeria, Nigeria, Cameroon and Qatar that could be available to our European allies and friends; this gas could replace part of the anticipated Siberian pipeline deliveries.

-- Within Western Europe, Norway has the potential to become an increasingly important gas supplier to Continental Europe in the 1990s, although prospects for accelerated development in the 1980s are uncertain. The US and others could assist Norway with recycling some of its increased revenues into long term profitable sources, so as to minimize the adverse short term effects in their economy. It may also be possible to convince the Dutch to slow their phase-out of exports in light of reduced demand. This is largely a political question, and could be influenced by our views.

-- Coal has more potential than any other resource for providing additional energy during the rest of this century and beyond. Rapid growth in the use of coal is critical to the successful transition to a more secure energy future. There are increasing indications that a "coal renaissance" is now underway and that the shift to increased coal use will gain momentum.

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-- The United States has taken and will continue to implement a number of steps which will increase the availability of oil as well as gas on the world market. We have already decontrolled oil prices in an effort to encourage domestic production and reduce wasteful use. Moves are also being taken to increase leasing of federal land including the Outer Continental Shelf in order to help stimulate heretofore locked-in domestic energy wealth.

-- The Administration is currently reviewing proposals for accelerated gas price deregulation. But, even if the deregulation process cannot be accelerated, price controls on most domestic gas will be removed by the time that the Siberian pipeline is completed. Accelerated gas price deregulation will help stimulate domestic production and enable the US to decrease its need ~~for oil~~ and gas imports.

-- As gas price deregulation proceeds, gas use will become more efficient and supplies more plentiful. To the extent the US will still require imported gas, market forces will favor imports from Canada and Mexico and possibly other Western Hemisphere sources rather than long-haul liquified natural gas (LNG). Even under our current competitive fuels test for the price of gas imports, long-haul LNG will have difficulty finding a place in the US market.

-- The Administration has announced its commitment to the development of nuclear power in the US and has stressed that the US will reestablish itself as a reliable partner in the international nuclear energy arena. Many of our allies and friends in Europe will welcome the reentry of the US into a position of leadership in the international nuclear community. Several European countries are concerned about problems related to the back-end of the nuclear fuel cycle, specifically reprocessing and waste management. Our more positive position on reprocessing and expanded nuclear cooperation, particularly in the back-end of the fuel cycle, could help to mitigate some of the problems associated with the accelerated development of west European nuclear power.

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A means to possibly delay construction of the pipeline would be a US embargo of compressors and related technology. The supply of turbines may be a critical chokepoint for the West Siberian pipeline project. The Soviets have ordered some $2 billion worth of turbine compressors for the project from Western European companies who are partial licensees of G.E. gas-turbine technology. Current plans call for General Electric (U.S.) to supply the European companies with $175 million in critical turbine technology. GE and Rolls Royce control directly, or indirectly by means of licenses, all Western technology for the production of turbines that could be used on the pipeline. A French company, Alstrom-Atlantique, is the only full G.E. licensee of gas turbine technology, but does not now produce the type of rotor that G.E.'s partial licensees in Europe have ordered from the American company. Under the terms of the Export Administration Act, the President could place either national security or foreign policy export controls on this equipment and technology.

The US faces four options with regard to an embargo:

(i) No embargo. This would mean a continuation of present policy, as the US does not currently control the export of turbines or compressors nor their components and technology. This option would allow the construction of the pipeline to go forward as expected and US industry, in particular GE, would benefit. The perception that this would implicitly signal US approval is somewhat muted by the fact that no US company is a direct supplier. Other high Administration priorities in European dealings could continue to be judged on their own merit (as opposed to being possibly affected if an embargo option is chosen).

(ii) US unilateral embargo. This would signal the Europeans of the seriousness of US intentions. It would also deny the Soviet Union the best product; the GE turbine is known to them -- it is already in use and it fits their needs. If denied the GE product, the Soviet Union would likely purchase the more expensive UK Rolls Royce turbine: it is similar to the US technology, although it has not been tested in the Soviet Union. We recently learned that the British EGCD (their EXIM equivalent) is prepared to finance Rolls Royce -- thus the British Government appears ready to support such a sale. There is an added Soviet bonus to buying the Rolls Royce unit, since it is an aeroderivative engine several generations more advanced than the G.E. product.

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(i of delaying delivery of compressor components for u... two years--the time needed for the French firm to produce a similar product. ~~There is question how~~ a delay in the components will affect the overall schedule of the pipeline completion.* Compressors can be added rather late during construction and, therefore, gas flow might not be delayed significantly. UK Defense Minister Nott told Secretary Weinberger in August that the idea of UK participation in an equipment embargo is a "non-starter" and would be "politically disastrous" for the Atlantic Alliance because of German sensitivities over the project.

(iv) UK/US/French embargo. This option would have the most effect in delaying the pipeline. The Soviets would have to substitute two to three times as many of their compressors for the higher quality Western alternatives, if the Soviets could indeed increase production to that level. As noted above, there would be possibly serious problems in obtaining the British and French support for such action. While G.E.'s full licensee in France is technically bound by contract to honor US export control regulations, the US has no means to enforce this regulation outside of its borders. Enforcement would require French Government assistance and the French are unlikely to stop a project in which they have an important energy stake. Neither the French nor the British have domestic legal mechanisms to control trade that has not been designated as strategic (i.e., trade which has direct military application) by COCOM. COCOM, which operates on a consensus basis, does not currently control equipment and technology in the energy area, and a US proposal in COCOM to institute an embargo would face German (and perhaps other) opposition.

Since neither the British nor French have legislation with which to control non-strategic exports, a possible US alternative strategy with these countries is to ask them not to extend official credits for substitute sales to the USSR. All existing equipment orders for the pipeline, with the exception of GE sales of rotors to its European manufacturing associates, are slated to receive official credits. If Rolls Royce and Alsthom-Atlantique were forced to offer market financing for their substitute products, their attractiveness as suppliers would be diminished. However, as rotors constitute only about 10% of the total value of turbine and compressor sales for the pipeline, the Soviets might pay the price to ensure that the pipeline moves forward.

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*This issue is being carefully considered at this time and more information should be available shortly.

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If we choose to pursue one of the embargo options, a convincing strategy will have to be developed to counter the likely European view that this is a means to punish them for their decision to proceed with the pipeline. The US should stress that this is not the case: it is our sincere view that the embargo would serve an important Western security objective. Because such action might delay construction of the pipeline, the Europeans may reassess the economic viability of the pipeline, which in the view of the US has not been given sufficient attention in light of recent and expected world energy markets.

The decision to embargo is likely to affect other areas of European-US relations. It may also drive a wedge between the allies which would benefit the Soviet Union. The pros and cons of this action will have to be given careful consideration alongside other high Administration priorities.

ANNEX VI - LIKELY EUROPEAN REACTION TO US CON[illegible] AND PRESENTATION

The Europeans are likely to reply that:

-- Projected levels of European dependence on Soviet gas are low. Dependence on Soviet energy will be 5 percent or less of total energy consumption in all countries except Austria. The Europeans conclude, therefore, that the Soviets would not gain any real leverage as a result of this pipeline.

-- Their use of Soviet gas is a necessary part of their strategy to reduce their oil consumption and to diversify their sources of energy. Soviet gas imports, by reducing their dependence on fuels from the Middle East, would, on balance, improve their overall energy security.

-- The Soviet Union, unlike Middle Eastern suppliers, has never in the past shut off energy shipments to West European countries for political reasons.

-- The only immediate alternatives to increased Soviet gas imports would be increased dependence on oil and gas from the least reliable Middle Eastern suppliers.

-- They have scaled-down the project and are contemplating a safety net based on:

- The flexibility of indigenous European gas production;

- Their ability to substitute other fuels (oil or coal) for gas used in electric power plants and industry;

- Significantly expanded stored gas reserves; and

- The integration of European national gas grids.

-- The US approach does not meet one of the major reasons for proceeding with the project--the creation of employment and contracts for the European companies, particularly in the currently depressed steel industry.

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THE DIRECTOR OF CENTRAL INTELLIGENCE

WASHINGTON, D. C. 20505

NFAC #6748-81
23 October 1981

National Intelligence Officers

MEMORANDUM FOR: Director of Central Intelligence

VIA: Chairman, National Intelligence Council

FROM: [redacted] 25X1
National Intelligence Officer for Economics

SUBJECT: Yamal Pipeline

CIA analysts have been exploring further the question of whether and how construction of the Yamal pipeline might be delayed. These are some preliminary results.

[redacted] 25X1

Attachment,
As Stated

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Deriv Cl By Signer
Revw on 23 Oct 87

ATT to NFAC #6748-81
23 October 1981

MEMORANDUM

SUBJECT: Impact of US Export Licensing Decisions on Completion of the Yamal Pipeline

1. Newly acquired information strongly indicates that US refusal to license key compressor components for the Yamal pipeline would not delay completion of that project. Previous estimates of delays of about two years in acquiring denied components from European suppliers appear to be correct; nevertheless, even with such a delay the compressors would be available soon enough to complete the pipeline about on schedule.

2. Well informed officials from four US pipeline companies and engineering firms, in discussions with CIA analysts, unanimously expressed the following views:

(1) If the US government refuses to license exports of key US-produced components for the GE compressor now planned to be used in the Yamal pipeline, the Soviets will quickly turn to the Rolls Royce RB211 as a substitute, with little degradation of results.

(2) They could also contract to have the embargoed components produced in Europe, even though this might take four years or so compared with less than two if these were obtained from GE. This would give the Soviets an option both for this and subsequent pipeline projects.

(3) The compressors or major compressor components could be installed in the last stages of the pipeline construction process. Since it would take at least four to five years to build the pipeline, the availability of compressors need not be a cause of delay.

(4) Delays of one to two years in construction time are in any event likely, not because of unavailability of compressors, but because of difficulties with weather, terrain, and inexperienced construction labor.

3. This information suggests that the US lacks the instruments necessary to delay completion of the pipeline through unilateral action.

All portions of this document are classified SECRET

Deriv Cl By Signer
Revw on 23 Oct 87

We may complicate the construction problem, but probably nothing more. We know of no evidence supporting a contrary view.

4. A more detailed analysis will be available on Monday, 26 October.

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NFAC #6748-81
23 October 1981

SUBJECT: Yamal Pipeline

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The Impact of COCOM and US Embargoes of Petroleum Equipment Exports

A total, effective and sustained multilateral COCOM embargo on exports of oil and gas equipment to the USSR and Eastern Europe would substantially retard Soviet energy development, and its impact would increase over at least the next decade. The impact of a unilateral U.S. embargo would be much smaller and transitory.

The most severe effect of a COCOM embargo would be on Soviet gas production. Construction of gas pipelines, the chief constraint on Soviet ability to expand gas production, depends heavily on imports of Western pipe and compressors, and Soviet capabilities for producing such equipment are already stretched to the limit. Without Western equipment a shortfall of at least 15 percent of planned gas production by 1985 would be almost inevitable. The shortfall would continue to increase later in the decade even though Moscow would give a high priority to expansion of its own pipe and compressor industry. A unilateral U.S. embargo would have virtually no effect on Soviet gas production.

In the case of oil, the most critical short term Soviet dependence is for US built submersible pumps, production of which is now a US monopoly. Denial of these pumps could cut Soviet oil production by around 2 percent over the next 2 years or so. Beyond that period, the impact would continue to increase with a COCOM embargo, but would quickly disappear with a unilateral US embargo as other Western producers entered the field.

As time goes on, Soviet dependence on Western oil equipment will increase, reflecting the rapidly growing complexity of oil exploration and development and the limitations of Soviet technology. Finding the smaller and more remote deposits on which Soviet oil production will increasingly depend, developing offshore fields, and expanding the use of enhanced oil recovery all will benefit greatly from--and in some cases will require--Western equipment. Although quantification is not possible, there is little doubt that a COCOM embargo would substantially accelerate the expected decline in Soviet oil production in the second half of the 1980s and beyond.

In turn, a more rapid decline in oil production coupled with a much smaller increase in gas production than is now expected would have an important depressing effect on the Soviet economy. Hard currency earnings would fall sharply, thus greatly curtailing Soviet imports from the West. And economic growth would be even slower than the 2 percent or less rate we now expect.

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The judgments of this paper are necessarily tentative because of the absence of information on specific Soviet plans, equipment production and inventories, and oil- and gas-field conditions. Nor can we foresee the long-term adjustment possibilities available to a large command economy. The basis for our conclusions is presented in the accompanying Annex, in which the ranges of impact on production shown for various types of equipment are probably more valid in reflecting relative rather than absolute magnitudes. The aggregate of the individual effects thus at best provides an order of magnitude impression, based on the best current judgments of our petroleum analysts.

ANNEX

Preliminary Judgments on the Impact of COCOM and US Embargo of Oil and Gas Equipment to the USSR

Background

Estimates of the effects of a Western embargo on the export of various kinds of oil and gas equipment to the Soviet Union are necessarily tenuous, as they involve assumptions as to the types and quantities of equipment that the Soviets will seek from the West in the next few years. In the past, imports from the West represented only a small percentage of total Soviet equipment supply. But new problems in exploration, production, and transport of oil and gas will probably lead the USSR to rely more heavily on imports in the 1980s. Although the Soviets show no inclination to avail themselves of opportunities they have ignored in the past, arrangements such as joint ventures or service contracts with Western firms could--under changed circumstances--offer productivity increases in petroleum extraction.

Effect of Embargo on Major Categories of Equipment

Exploration Equipment

The Soviets already have found most of the relatively shallow, easily-located, accessible oil and gas traps. They specifically need Western seismic and well-logging technology to boost oil reserves in the 1980s. Due to the 5 to 6 year discovery-to-production time lag, Western equipment ordered today is unlikely to have much impact on oil production before the late 1980s. While a multilateral embargo could severely constrain Soviet exploration, unilateral controls by the US would have little or no effect. Foreign firms can supply Soviet needs with little or no degradation in quality. But we do not believe that the Soviets can improve their own exploration technology (i.e., geophysical hardware and software) rapidly enough to affect production before the 1990s.

Drilling Equipment

The Soviets plan to nearly double the amount of drilling for oil and gas in 1981-85, with further increases planned for the late 1980s. Soviet drilling productivity is poor by international standards. Western rigs, drill pipe, tool joints, drill bits, blow-out preventors, and drilling-fluid technology already provide substantial aid to Soviet drilling efforts. The Dresser drill-bit plant, if brought on stream with US or Western assistance, could have a considerable impact on Soviet oil

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production by the late 1980s. Although the US is the world's leader in the production of drilling equipment, producers in Japan and Western Europe could supply the Soviet market. A unilateral US embargo would therefore not have much bite.

Production Equipment

The Soviet oil industry faces rising fluid-lift requirements in the 1980s, as the amount of water produced along with the oil increases. According to Soviet plans, a large additional volume of fluid--perhaps as high as 6 million b/d--must be lifted in 1985 simply to maintain oil production at the 1980 level of about 12 million b/d. To handle the high volume of fluid, the Soviets plan to double the number of wells producing with the help of submersible pumps and gas-lift equipment.

Imported equipment is important for this effort because the capacity and quality of Soviet-made submersible pumps and gas-lift equipment is low. In the case of high capacity pumps, U.S. producers now have a monopoly but, if these were embargoed, other Western suppliers could be expected to enter the field within about two years. Each high-capacity U.S. pump produces on the average about 1,000 to 1,500 b/d of oil under Soviet conditions. The Soviets probably expect to import about 100 such pumps annually (in the 1970's they imported a total of 1,200). The water-cut problem in Soviet oilfields is getting worse, and domestic development of a good substitute pump has not yet been successful. Denial of the U.S. pumps consequently could cost the Soviets 200,000 to 300,000 b/d of oil before other Western suppliers could come on stream. In the case of a COCOM embargo, the impact would continue to grow, probably for several more years.

In addition to high capacity pumps, Western equipment playing a significant role in Soviet oil development includes gas-lift equipment, well-completion equipment, wellhead units, and Christmas-tree assemblies.

The USSR also has an increasing need for Western enhanced-oil-recovery technology. Enhanced recovery projects have long lead times, however, and the effect of Western assistance would be relatively small and felt only after 1985.

Offshore Equipment

The Soviets' least-explored prospective areas for new petroleum discovery are offshore, and their oil and gas production in the late 1980s and beyond heavily depends on the development of such areas. The Soviets already have received substantial assistance from the West. Continued assistance could speed development in the Caspian area. A US embargo applied unilaterally would make little difference. After 1985, COCOM restrictions would have very little effect. Firms in Finland, Singapore, Mexico, and Yugoslovia can supply most of the USSR's current offshore needs, and all of their requirements by the late 1980s. Production of the few drilling components now produced only in the US could be quickly introduced abroad.

Oil Refining and Gas Processing Equipment

The Soviets intends to expand their secondary refining and gas processing industries substantially in the 1980s. They are relying almost exclusively, however, on their own production or on equipment imported from Eastern Europe.

Gas Pipeline Equipment

Although the Soviet Bloc produces most of its own oil pipeline equipment, the USSR relies extensively on the West for gas pipeline equipment--large-diameter pipe and valves, compressors, and pipelayers. Since pipelines are the principal bottleneck in Soviet gas production, a COCOM embarog on pipe, compressors, and pipelayers would be a major setback to the Soviet gas industry. High-quality large-diameter pipes and valves are currently produced only in Western Europe and Japan.* Although the Soviets have recently built a plant to manufacture large-diameter pipe, they have yet to master production of pipe of this size. Pipelayers capable of handling this pipe are produced only in the US, Italy and Japan. Large turbine compressors of the type sought by the Soviets for the export pipeline project are built in the United States and the United Kingdom. Smaller units are built by firms in France, Germany, Italy, and Japan; none of these, however, has yet attempted to make a 20 to 25 MW unit, although a French firm has the necessary licensing.

A multilateral COCOM embargo on gas pipeline equipment could reduce gas production by as much as 10 billion cu. ft./day (1.75m b/d, oil equivalent) in 1985 and by substantially more after 1985. US unilateral restrictions on equipment in this area, however, would have minimal impact. The US does not produce the pipe or valves sought by the USSR, and pipelayers and compressors can be supplied from abroad. Foreign production of industrial compressor turbine shafts and blades, the sole area now subject to US control, could begin in sufficient time to prevent a delay in completion of the pipeline.

* Although the Soviets produce pipe up to 1,420 mm. (56 inches) in diameter, little is for natural gas pipeline service. Most Soviet pipe is spiral welded and lacks the (HSLA) high-strength, low alloy metallurgy of Western steel for Arctic pipeline service. Most of the large pipe imported by the USSR is fabricated with a single longitudinal weld made by the submerged arc process.

Implications of an Embargo on Equipment for the Yamal Pipeline

A full COCOM embargo on equipment for Siberia-to-Europe gas pipeline presupposes West European agreement to abandon the project. A unilateral US embargo on critical gas turbine components destined for use on the Yamal Pipeline probably would not substantially delay the project.

(a) The Soviets have designed the export pipeline compressor stations to use either General Electric (GE) or Rolls-Royce (United Kingdom) turbines, and a US embargo on GE could prompt Moscow immediately to switch to Rolls-Royce, which probably can produce the needed turbines roughly within the time sought by the Soviets.

(b) Even if the Soviets stay with the GE design and thus receive complete delivery from West European firms of turbine-compressor units two years later than without the embargo on GE, the pipeline probably would not be seriously delayed beyond the full-capacity completion date we now expect--late 1986 to early 1987. The Soviets would take at least 5 years to build the pipeline and complete all of the compressor stations even without an embargo on GE exports. Thus many turbine-compressor units, even if delivered by late 1983 as Moscow wants, would have to wait several years before installment in compressor stations. If West European delivery of the GE-design turbines were not completed until late 1985, the Soviets could still bring the pipeline to full capacity within another year by placing those late-arriving units into the last compressor stations to be completed.

(c) Because of likely slippage of construction schedules on the Soviet side, even a substantial delay in delivery of Rolls-Royce turbines (beyond the late-1983 to early-1984 deadline now seen as feasible if Moscow switches soon to that firm) probably would not delay the completion of the pipeline project.

Economic Impact of Export Controls

A sustained multilateral embargo on exports of energy-related equipment to the USSR could lead not only to substantial effects on oil and gas production but also to a significant worsening of already poor economic prospects. The losses in gas and oil production would probably amount to 2 - 3 million b/d (oil equivalent) in the mid and late 1980's, of which the longer part would be gas.

Part of this short-fall in energy production--perhaps of the order of 1 million b/d--would be absorbed through cuts in exports of oil and gas to the West and Eastern Europe. Exports of oil and gas account for about one half of present Soviet hard currency earnings.

Even after major trade adjustments, domestic energy supplies would probably be reduced by 1 - 2 million b/d, or some 5% by the mid to late 1980's.

The average annual growth of GNP in the 1980's (now projected at around 2 percent) probably would be lowered by half a percentage point or so. As time went on, the USSR would adjust to an embargo through cutbacks in imports from the West, stepped-up domestic production of oil and gas equipment, and forced conservation, as well as through slower economic growth.

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Tab I

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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

MEMORANDUM FOR: Allen J. Lenz
Staff Director
National Security Council

SUBJECT: Possible Allied Response to US Strategy on the Pipeline

Attached is a paper in response to your request of 23 October. The paper was prepared by the Office of European Analysis, National Foreign Assessment Center and coordinated within CIA as appropriate.

[redacted] 25X1
Executive Secretary

Attachment:
As stated

Distribution:
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Possible Allied Responses to US Strategy on the Yamal Pipeline

A policy of seeking COCOM cooperation to stop the Siberian pipeline would probably have a low yield and a high cost. The Allies have already decided that the project is in their interest and will not voluntarily halt their participation. In the immediate term, US attempts to force a stop to the project are likely to jeopardize the current US initiative to broaden and strengthen COCOM export controls in a number of military-related industrial sectors. In addition, the West Europeans view the project as strictly their own affair and resent US interference; US pressure thus could pose major risks for US-Allied relations. 25X1

COCOM may not in any case be the best vehicle for applying US pressure. The US is no longer able to exert a significant amount of influence or control within COCOM because Western Europe and Japan, as well as several non-COCOM members such as Austria, Switzerland, and Sweden, either possess equivalent technology or are ahead in a number of the latest technologies that COCOM attempts to deny the Communist countries. Although reasonably successful, the recent US experience in attempting to strengthen COCOM controls in the aftermath of the Soviet invasion of Afghanistan illustrates how difficult it has become for one country to force its way in the COCOM forum. Oil and gas equipment technology is not currently subject to COCOM embargo, and our Allies would resist strongly placing such items on the COCOM list on strategic grounds. However, because some advanced technology components involved in the pipeline may be subject to COCOM exception notes, the US could at least raise the issue as one of concern within present COCOM procedures. 25X1

Even outside COCOM, persuasion has failed with the West Europeans and Japanese because -- despite US arguments -- they see aiding the Soviets in energy production as a positive contribution to the global economy. They also are convinced they will derive a formidable list of economic and political benefits from the pipeline project, including:

- o Near-term export earnings for industries supplying materials for the pipeline and a stream of future exports financed by Soviet gas sales.
- o The chance to use another country's energy resources, thus saving domestic resources for later consumption.
- o The project's contribution to improved East-West relations generally. 25X1

Convincing the Allies to halt pipeline-related equipment and technology sales would require several carrots or sticks, or some combination of the two. These incentives could be used directly or indirectly. In other words, the potential benefits to the major Allies outlined above must be attacked or offset directly, or an indirect cost must be imposed that is perceived to be greater than the potential benefits. 25X1

It is very late in the game to attack West European and Japanese perceptions directly.

- o The West Europeans have not found credible US suggestions concerning other energy sources such as US coal, help in nuclear construction, or assistance in developing alternative sources of gas such as Algeria, Nigeria, or the North Sea.

- o No substitute project appears on the immediate horizon that could provide the employment and earnings offered by the Soviet deal.

- o Most West Europeans are convinced they will need the gas, and they view with suspicion any US forecasts indicating otherwise.

- o The West Europeans and Japanese would perceive a restrictive US pipeline policy as a potential threat to <u>all</u> East-West trade, rather than a threat "only" to energy-related trade. Moreover, backing out of the pipeline deal after preliminary agreements have been reached would be viewed by the Allies as a breach of faith on their part that would threaten other commercial relations. 25X1

It would at least theoretically be possible to make benefits available to the Allies that offset many of those they think would derive from the pipeline. But alternatives would be extremely costly, e.g., providing them with commensurate export earnings, or giving them guarantees in regard to energy supply that would be credible enough to offset their perception of Soviet reliability. Moreover, some of the motives for their commitment -- desire to encourage Soviet energy production and to broaden East-West relations, for example -- are almost impossible to counter. 25X1

Washington could warn that US <u>trade</u> relations with both Japan and Western Europe would be <u>harmed</u> seriously if the pipeline sales are concluded. For example, a tighter trigger price mechanism on steel or a tougher stance toward EC agricultural commodities such as sugar could be adopted. Other pressures could include non-tariff measures such as stricter labeling standards or increases in excise taxes on alcoholic beverages. The US might also limit sales of particular goods to the Allies, although such measures would have only a minor impact since alternatives to most US goods exist. More important, trade actions along these lines would be interpreted as first salvos in a full-fledged economic war and would almost certainly result in retaliation. As the US currently runs a sizable trade surplus with Western Europe -- to the tune of around $25 billion last year -- the US probably would be the ultimate loser in economic terms. 25X1

In the area of finance, the US could offer to reduce its interest rates -- a major irritant in current economic relations with the Allies. The West Europeans and Japanese would probably view the promise as either impossible to keep or something the US should do regardless of Allied decisions on the Soviet gas deal. The US also might threaten to tighten controls on US banking subsidiaries overseas or on foreign investment in the US. This would upset West European and Japanese capital markets but would be unlikely to force the Allies to renege on the pipeline deal. In addition, the Allies would view such a move as self-defeating as it could punish US banks and the dollar more than it would hurt the Allies. 25X1

Another potential area for US action is in the military/strategic field. The US could refuse to pay for stationing US troops in Western Europe, particularly in West Germany, and threaten to withdraw these troops if funds were not forthcoming from the West Europeans. Such a move would of course greatly aggravate the West Europeans' current concerns over whether they could count on the US if war broke out in Europe, and it would make NATO cooperation even more difficult. A significant positive incentive would be a US offer to make the "two-way street" in government military contracts wider and allow more traffic on it. A negative incentive would be US cutbacks in military technology sharing or co-production agreements such as jet engines for Sweden or tactical systems for the UK and Japan. 25X1

From an individual country point of view, the United Kingdom would stand to lose the least if exports of pipeline-related equipment were blocked. The British enjoy net energy self-sufficiency, and they will be buying none of the Soviet gas. On the other hand, British agreement to US strategic export definitions would have little impact on the other major West Europeans, all of whom are more involved in the pipeline project and whose stake in East-West trade generally is much greater. Moreover, Rolls Royce is the only major producer of pipeline compressors that does not rely on US technology. If the US refuses to license pipeline-related exports and is able to prevent foreign licensees from selling the equipment, London and Rolls Royce have indicated their willingness to fill the vacuum -- and action consistent with Britain's present economic problems. 25X1

West Germany's commitment to the pipeline project -- and to "Ostpolitik" generally -- is firm and Bonn views the two as closely linked. Although West Germany's future gas needs are not as pressing as those of France or Italy, the project for Bonn has become an important symbol of the benefits of East-West economic cooperation. Cancellation of the pipeline deal thus would be seen as a severe blow to Ostpolitik and would undermine Bonn's fundamental national policy -- reconciliation with East Germany. Because the US is perceived to endorse this reconciliation, US action against the pipeline would be seen as a betrayal of German interests. Given the current political climate in West Germany, no government in Bonn could survive if it gave in to US pressure. Even if the more conservative opposition came to power, it would defend West German interests in similar terms. 25X1

French President Mitterrand is more cautious toward the Soviet relationship than was his predecessor, and Paris currently appears more willing to consider the strategic implications of the gas deal than is Bonn, Rome, or perhaps even London. Paris argues, however, that France needs the gas and that allowances have already been made to reduce the potential for Soviet leverage. The amount of gas to be purchased has been reduced, increased storage capacity is planned, interruptable contracts for industry will be used, and residential consumption will not be encouraged. The French also point out that their only immediate alternative supplier is Algeria, and it's cut-off of gas exports last year, plus current price disputes, indicate that the USSR is a better -- and safer -- bet. In addition, although Mitterrand's East-West views appear close to Washington's, the French president cannot appear to be giving in to US pressure. 25X1

The Italians, although apparently further along in the pipeline negotiations than the other West Europeans, might be more vulnerable to US pressure. A US commitment to grant the Italians more nearly equal status in "Western power" deliberations would go a long way toward persuading Rome -- provided that the Italians saw no chance of other West Europeans snapping up any deal turned down by Rome. Italy's decision would have little impact, however, on the decisions of France or West Germany. 25X1

Japan, in response to a perception that the US has begun to ease up on Afghanistan-related sanctions, has been edging recently toward a new dialogue with Moscow. The Japanese believe that increased interdependence contributes to the stability of Tokyo's relations with Moscow; they would not voluntarily abandon a cooperative approach except as part of a unified Western response to a crisis in East-West relations. Even in a crisis, Tokyo would be likely to follow suit only if the leading West European allies, particularly West Germany, agreed to tight new sanctions. The cost of buying Japanese cooperation if West Germany did not go along would be extremely high. To placate the business community, Tokyo would surely argue for future access to Alaskan oil if it were forced to deal itself out of the pipeline or to cut back on other joint energy development projects in the USSR. The US has a growing trade deficit with Japan and could use Japanese reliance on the US market as a lever. Any move to tie the trade issue to East-West relations, however, would run a very high risk of undoing what progress Washington has made in opening Japan's market to US goods and encouraging the Japanese to increase their defense efforts. [redacted] 25X1

It is therefore our judgment that persuading the Allies to halt the pipeline project could be accomplished only at great cost. In fact, the political and strategic impact of applying the sticks to achieve US goals could be profound. COCOM almost certainly would be undermined and might collapse. The very informality of COCOM makes it both a flexible and a fragile organization. The unanimity rule allows each member to protect its own interests but also can prevent action. The other COCOM members already view the US as too restrictive and will resist further US moves to tighten the COCOM embargo at the upcoming high-level COCOM Ministers Conference tentatively scheduled for November 1981. A perception of US heavy-handedness in COCOM could shatter the consensus that holds COCOM together. Beyond COCOM, there is a good chance that NATO and Western cooperation generally would be seriously threatened. [redacted] 25X1

Any pressures applied by the US would have a much greater chance of success if the West Europeans saw total, unwavering commitment on Washington's part. For example, in West European eyes, US opposition to the pipeline deal currently appears self-serving and inconsistent. US decisions to lift the grain embargo and to approve the Caterpillar pipe-laying equipment contract have contributed to this view. We believe a successful campaign would necessarily involve at least the appearance of shared sacrifice. For the West Europeans, the clearest example of US sacrifice would be a firm US embargo on grain exports to the USSR as well as sales of energy equipment and technology. We would emphasize, however, that such measures might not succeed and that the West Europeans would be sorely tempted in any event to fill the void created by a US embargo on exports to the Soviet Union. [redacted] 25X1